

XVII.—Natal Bees

by

T. D. A. Cockerell, University of Colorado.

MORGANIA CHUBBI, sp. nov.

♀. Length about 6·5 mm., expanse 13·5 mm.; black, including legs, mandibles, antennæ and tegulæ, except that the fourth antennal joint is red on outer side; wings long, dusky hyaline, the apex broadly infuscated, stigma and nervures black; face with appressed silver-white hair; antennal basin depressed; front strongly punctured, but shining between the punctures; mesothorax shining, very strongly but not very densely punctured; scutellum elevated, bigibbous, strongly punctured; metathorax bare in middle, but laterally clothed with white hair; pleura with a very broad transverse band of silvery hair, prolonged downward anteriorly and posteriorly; tegulæ large; tibiæ and tarsi with silvery hair; spurs ferruginous; abdomen sub-globose, shining, the first segment impunctate; a patch of silvery hair on each side of first segment, and hind-margins of second to fourth with bands of silvery hair, that on second broadly interrupted in middle; pygidial plate coarsely punctured and irregularly longitudinally ridged.

Bellair, Natal, 13th January, 1919, "visiting hole in vertical bank on side of road" (E. C. Chubb).

MORGANIA BARKERI, sp. nov.

♀. Length about 7·5 mm.; black, with the apical half of mandibles dark reddish. Similar to *M. chubbi*, but differing thus: face narrower; antennæ somewhat longer, entirely black, the joints very distinct; mesothorax more finely and closely punctured; metathorax hairy almost to middle; pleura thinly hairy, but without a distinct transverse band; tarsi longer; spurs black; wings uniformly fuliginous; second recurrent nervure joining second sub-marginal cell some distance before end (meeting second transversocubital in *M. chubbi*); abdomen rather narrower.

Durban, Natal, 9th March, 1918 (C. N. Barker).

The species of *Morgania* are described by Friese under *Omachtes*, but F. Smith's generic name *Morgania* has priority. The species now described differ from the majority by the black abdomen and legs.

M. gabonensis (Vachal) is a somewhat similar insect, nearest to *M. chubbi* by the colour of the wings and the venation. It has the anterior legs and the base of the venter more or less dilute reddish. Unfortunately, Vachal's unique type was without a head.

The species of *Morgania* at present known, all African, are as follows :

| | |
|-------------------------------------|---|
| <i>M. dichroa</i> (Spinola). | <i>M. graenicheri jenseni</i> , Friese. |
| syn. <i>carnifex</i> , Gerstaecker. | <i>M. appletoni</i> , Cockerell. |
| <i>M. gerstaeckeri</i> (Schulz). | <i>M. capicola</i> (Strand). |
| syn. <i>dichroa</i> , Smith. | <i>M. nigrithorax</i> , Strand. |
| <i>M. gabonensis</i> (Vachal). | <i>M. nigripes</i> (Friese). |
| <i>M. histrio</i> (Gerstaecker). | <i>M. capensis</i> (Friese). |
| <i>M. villosa</i> (Friese). | <i>M. abessinica</i> (Friese). |
| <i>M. graenicheri</i> (Brauns). | <i>M. rufipes</i> (Friese). |

M. graenicheri is a comparatively large species, 12 mm. long. All these insects are parasitic, but so far as I know, their biology has not been elucidated.

ANTHOPHORA BIPARTITA, Smith.

Females collected by A. L. Bevis, 6th and 20th June, 1916, at Durban.

The pale stripe on the clypeus may be reduced to a spot just above the margin. There is a little white or pale hair on each side near the end of the abdomen. The species was described from Natal.

COLLETES, Latr.

Nine specimens of South African *Colletes* before me belong to five different species, none of which agree with any published descriptions. One species was sent to me by Dr. H. Brauns as *C. martini*, Vachal, but I cannot discover that Vachal published it, and it is not mentioned in Friese's great work on African bees.

The species may be separated thus :

Hair of mesothorax white or whitish, contrasting with the orange-fulvous of scutellum *martini*.

Hair of mesothorax (♀) pale ochraceous mixed with fuscous, that of the scutellum similar; first abdominal segment strongly punctured *fusconotus*.

Hair of mesothorax and scutellum (♀) ferruginous mixed with fuscous; first abdominal segment polished and feebly punctured *seminitens*.

Hair of mesothorax and scutellum ferruginous (δ); first abdominal segment strongly punctured . . . 1.

1. Basal area of metathorax with a strong transverse keel . . .
marleyi.

Basal area of metathorax without such a keel . . . *durbanensis*.

COLLETES MARTINI, sp. nov.

δ (type). Length about 9 mm.; black, the mandibles at apex, last joint of tarsi, and base of hind basitarsi red; head and thorax with abundant long pure white hair, except that on scutellum and post-scutellum it is clear orange-ferruginous; head very broad, facial quadrangle broader than long; antennæ black, the flagellum dark coffee-brown beneath, flagellar joints much longer than broad; malar space conspicuously longer than broad; mesothorax closely and rather finely punctured, the surface hard to see because of the hair; scutellum anteriorly bare, polished and impunctate; area of metathorax with extremely short basal plicæ, followed by a rugose area, but the apical part smooth and polished; tegulæ testaceous; wings clear hyaline, stigma ferruginous, nervures fuscous, second submarginal cell very broad; legs with white hair on outer side, anterior tibiæ and all the tarsi with pale golden on inner; abdomen with the first two segments closely and finely punctured; first segment thickly covered with long ochreous-tinted hair, the apical band pale reddish, white at sides; segments 2 to 5 with very dense broad white hair-bands.

♀ . Length about 11 mm.; the general appearance like the male; middle joints of flagellum a little broader than long; malar space large, slightly broader than long; vertex with pale fuscous hair; hair of mesothorax slightly yellowish, mixed with very pale fuscous, but still contrasting with the orange-fulvous of scutellum; hind legs mainly red, and the other legs with red stains; first abdominal segment with dense creamy-white hair, the apical band narrow; second segment with similar but much shorter hair; segments 2 to 5 with broad white apical bands; segments 4 and 5 with scattered black hairs before the bands.

Willowmore, Cape Colony (Dr. H. Brauns). Male, 15th March, 1903; female, 15th October, 1899. Apparently nearest to *C. schultzei*, Friese, but smaller, and with very conspicuous abdominal bands. *C. fasciatus*, Smith has orange abdominal bands.

COLLETES FUSCONOTUS, sp. nov.

♀. Length about 9·5 mm.; black, robust, mandibles obscurely reddened in middle, hind tarsi stained with red; hair of head and thorax greyish-white, dorsally pale ochreous, strongly mixed with fuscous on vertex, mesothorax and scutellum; clypeus densely rugosopunctate all over; labrum smooth and polished, the median pit very small; malar space very short, much more than twice as broad as long; flagellum short, dark reddish beneath; sides of vertex shining, but deeply excavated by the broad foveæ; mesothorax densely punctured, except the posterior middle; area of metathorax coarsely reticulate, the apical part polished; tegulæ rufotestaceous; wings brownish-hyaline, stigma ferruginous, nervures fuscous; middle femora produced to a sub-basal triangular tooth beneath; first four abdominal segments with broad greyish-white hair-bands; first segment hairy at base and sides, shining strongly and rather closely punctured; second segment minutely and densely punctured; hind margins of segments reddish.

Winklespruit, Natal, 31st December, 1918, two (C. N. Barker).

Known by the black legs, colour of hair on thorax, and short malar space. It runs out at 3 in Friese's table. *C. negligendus* (Dalla Torre), from Natal, has testaceous nervures and black stigma.

COLLETES DURBANENSIS, sp. nov.

♂. Length, 8·5–9 mm.; black, only the mandibles and tarsi red apically; head and thorax above with clear orange-fulvous or ferruginous hair, otherwise with pale ochreous tinted hair, white on cheeks; antennæ black; malar space short, about twice as broad as long; mesothorax and scutellum dull, the latter with a shining line in middle; area of metathorax coarsely reticulate, without a transverse keel; tegulæ ferruginous; wings hyaline, faintly dusky, nervures fuscous; legs with pale ochreous-tinted hair; spurs pale reddish; first abdominal segment very distinctly punctured, with thin long pale ochreous hair all over; second segment with fine but distinct punctures; segments 1 to 5 with dense light ochreous apical hair-bands; apical segment broadly rounded.

Durban, Natal, 11th March, 1917, and 1st April, 1917 (E. C. Chubb).

Distinguished from *C. malma* (Cameron) by the ochreous hair-bands and the almost entirely black tarsi.

COLLETES MARLEYI, sp. nov.

♂. So similar to *C. durbanensis* that I at first thought it identical, but readily distinguished by the very strong transverse keel on the metathoracic enclosure, the clearer (yellower) hair of thorax above, and the broader abdominal hair-bands. The ventral abdominal segments are fringed with very abundant and long hair, whereas in *C. durbanensis* they have dense short even fringes.

Krantz Kloof, 4th April, 1917 (H. W. Bell Marley).

COLLETES SEMINITENS, sp. nov.

♀. Length about 9 mm. ; black, mandibles with a red band, tarsi red only at apex ; hair of head and thorax pale ochreous, dorsally ferruginous mixed with fuscous ; clypeus densely punctured ; labrum smooth, without ridges ; malar space very short, at least twice as broad as long ; flagellum faintly reddish beneath, the last joint distinctly so ; mesothorax and scutellum dull, the latter with a smooth median line ; area of metathorax above reticulate, below smooth, with a moderate transverse keel ; tegulae rufous ; wings brownish-hyaline, nervures fuscous ; middle femora with a prominent sub-basal tooth beneath ; legs with pale ochreous hair, middle and hind basitarsi with a brilliant copper-red apical brush ; abdomen thinly hairy, with pale hair-bands ; first segment polished, with very minute inconspicuous punctures, more distinct at the sides ; second segment extremely finely and densely punctured.

Durban, Natal, 11th March, 1917 (E. C. Chubb).

Possibly the female of *C. durbanensis*, but the base of metathorax differs, and the first abdominal segment is remarkably smooth and feebly punctured in the middle. For the present they must be regarded as distinct.

SPHECODES AFRICANUS, Friese.

Females, Stella Bush, Durban, 31st December, 1916, 2nd January, 1917. Both collected by C. N. Barker. Durban, 11th March, 1917 (E. C. Chubb).

Lower Umkomaas, 18th December, 1914 (L. Bevis).

Male, Durban, 31st March, 1913 (W. Haygarth).

S. africanus was described by Friese in 1908 from a single female from Ukami in Usambara. In 1911 Strand recorded a female from Delagoa Bay, and as it differed somewhat from Friese's type, he called it var. *delagoæ*, Strand. The two forms were separated thus :

Tegulæ black or nearly so, with a yellow spot anteriorly ; thorax black ; antennæ black. . . . *africanus*, Friese.

Tegulæ pale yellowish anteriorly and brownish-yellow posteriorly, only the inner side posteriorly blackish ; lateral margins of mesothorax, prothorax and tubercles red ; scape and under-side of flagellum reddish *delagoæ*, Strand.

The Natal females have reddish tegulæ, with a pale area in front. The antennæ are black. Only one, that marked "Lower Umkomaas," has the tubercles and upper part of prothorax bright ferruginous, and the lateral areas of metathorax suffusedly dark reddish.

The male, not before known, is about 9 mm. long ; wings fuliginous, but paler than in the female ; mandibles red, simple (with an inner tooth in female) ; face with long white hair, but lower half of the densely punctured clypeus bare ; first abdominal segment black, with the posterior margin very broadly red ; second red ; third red, with a large black stain in middle ; remaining segments black, but apical plate red ; legs black, the knees red and the anterior tibiæ red in front. The antennæ are black, the flagellum moniliform. This is considerably larger than the male of *S. capensis*, Cameron, and also differs by the darkened wings and greater amount of red on abdomen. The thorax shining between the punctures and the darkened wings separate it from *S. punctatus*, Sichel.

The Natal specimens are not precisely typical *africanus*, nor are they typical *delagoæ*. Possibly a third race is indicated ; but since the forms previously described are known from single specimens, and our material shows the insect to be variable, it is impossible at present to be sure that we are dealing with races rather than individual variations. Superficially, these insects resemble those species of *Nomia* in which the abdomen is red.

XYLOCOPA CARINATA FULVOPILOSA, Friese.

♂. Bluff, Durban, 8th November (C. N. Barker).

XYLOCOPA RUFITARSIS, Lepeletier.

♀. Impendhle, January, 1916 (E. C. Chubb). The mandibles have a tubercle on the upper-side toward the base, and the fourth abdominal segment has a black opaque mark on each side basally. The wings are somewhat more pointed than in *X. carinata*, and the punctures of the mesothorax are smaller. The flagellum is black.

MESOTRICHIA BEVISI, Cockerell.

The type has only two sub-marginal cells, but two males now before me, collected by Mr. Bevis, at Umbilo, have three sub-marginals. Evidently the insect varies in this respect, but the other characters amply distinguish it.

CROCISA CALCEATA, Vachal.

♀. Bellair, Natal, 13th January, 1919 (E. C. Chubb).

CROCISA CYANESCENS, sp. nov.

♀ (type). Length about 12 mm.; markings very pale blue; scutellum deeply incised, but sides of incision flexuose; long white hair projecting from beneath incision; disc of scutellum with black hair, but no light spots; axillæ with spots of light hair; hind femora not toothed; hair-markings on each side of first abdominal segment U-like; bands on each side of second segment thick, a little longer than the interval between them, and with no lateral anterior lobe; hind tibiæ with less than basal half white-haired; hind basitarsi white-haired posteriorly; ventral surface of thorax with white hair. General appearance and markings as in *C. calceata*, but larger, with the marginal cell distinctly longer, scutellum more deeply incised.

♂. Length about 12 mm.; axillar spots very small; rather more than basal half of hind tibiæ light-haired; end of abdomen with two prominent, widely separated teeth, much better developed than those of *C. calceata*. Scutellum and mesothorax shining.

Type from Malvern, Natal, 16th January (Barker). Male from Umbilo, 22nd March, 1913 (A. L. Bevis).

This looks just like the Indian *C. ramakrishnae*, Ckll., the only obvious superficial difference being that the wings are not so dark.

It is not quite certain that the male belongs to the same species, but without more material it seems hazardous to separate it. The character which especially suggests doubt as to identity is the smooth shining scutellum, that of the female being conspicuously black haired. If the male is separable, it must represent another new species.

CROCISA CANDIDA, sp. nov.

♀. Length 10-12 mm.; markings pure white; margin of scutellum \sim -like; long white hair from behind notch; disc of scutellum with short black hair, but no light spots; axillæ with white hair on margin next to scutellum; anterior wings very dark; hind femora not toothed; hind tibiæ with white hair on basal two-thirds; hind basitarsi with thin white hair on outer side; marks at sides of first abdominal segment C-like, the interval between the apical bands at least as great as length of bands; bands of second segment very broad, broadest laterally, where the anterior margin is obtusely more or less angular; sternum not hairy, but small tufts of white hair on the coxæ. In Friese's table runs near *C. meripes*, Vachal, and *C. calceata*, Vachal, from which it is easily separated by the pure white hair. There is a strong general resemblance to *C. braunsi*, Friese, but the interval between the abdominal bands is greater, and the scutellum is not spotted. It is also related to *C. alfkeni*, Brauns, from Willowmore, but with darker wings. It is possibly a local race of *C. alfkeni*, the ♀ of *C. alfkeni* is 7 to 10 mm. long.

Bellair, Natal, 13th January, 1919 (E. C. Chubb). Two specimens.

PROSOPIS BRAUNSI, Alfken.

Dr. Brauns (litt., 1918) now states that *P. braunsi* is a valid species. He adds that it varies in the red on base of abdomen; the red may even be absent. The colour of the legs also varies. Dr. Brauns saw the type of *P. rubriplagiata*, Cameron, and found it to be *P. heraldica*, Smith.

PROSOPIS HERALDICA, Smith.

♀. Umbilo, February, 1917 (L. Bevis); Durban, 31st July, 1916 (C. N. Barker).